

MATERIAL SAFETY DATA SHEET

SOLARIS

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DATE PREPARED: 08/03/1995

MSDS No: 6046

Roundup® Concentrate Weed & Grass Killer

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: Roundup® Concentrate Weed & Grass Killer

Product Description: Herbicide

MANUFACTURER:

The SOLARIS Group
of Monsanto Company
P.O. Box 5008
San Ramon, CA 94583-0808

24 HR. EMERGENCY TELEPHONE NUMBERS:

Emergency Phone 800-454-2333

EPA Reg. No.: 239-2636

PN: 6041

2. COMPOSITION/INFORMATION ON INGREDIENTS

	wt. %	CAS Registry #
Glyphosate, Isopropylamine salt of N-(phosphonomethyl) glycine	18	38641-94-0
INERT INGREDIENTS	~81.99	

"Inert ingredients" is a term defined by the U.S. Environmental Protection Agency under the Federal Insecticide, Fungicide, and Rodenticide Act (40 CFR 156.153). It refers to any substance, other than an active ingredient, which is intentionally added to a pesticide product. Some inert ingredients may be hazardous chemicals, as defined by the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200). The hazards associated with these inert ingredients have been included in this document.

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE:

- Liquid with a slight ammonia odor.

IMMEDIATE CONCERNS:

- MAY CAUSE EYE IRRITATION
- AVOID CONTACT WITH EYES, SKIN OR CLOTHING
- KEEP OUT OF REACH OF CHILDREN

POTENTIAL HEALTH EFFECTS

EYES:

Eye contact may include discomfort, tearing, swelling, redness, and blurred vision. See Toxicology Information, section (11).

SKIN:

This substance is not expected to cause prolonged or significant skin irritation. If absorbed through the skin, this substance is considered practically non-toxic to internal organs. This product is not expected to cause allergic skin reaction. See Toxicology Information section (11).

SOLA-00-0046.02



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INGESTION:

Ingestion may produce irritation of the digestive tract as demonstrated by signs and symptoms of mouth membrane irritation, nausea, vomiting and diarrhea.

INHALATION:

Overexposure to spray mist may result in minor irritation of the upper respiratory tract.

4. FIRST AID MEASURES

EYES:

If in eyes, immediately flush with plenty of water. Get medical attention if irritation persists.

SKIN:

No first aid procedures are required. As a precaution, wash skin thoroughly with soap and water. Remove and wash contaminated clothing.

INGESTION:

If swallowed, immediately telephone a poison control center, emergency treatment center or a physician for advice. DO NOT make person vomit unless directed to do so by medical personnel. If medical advice cannot be obtained, then immediately take person and product container, with label, to an emergency treatment center.

INHALATION:

If respiratory discomfort or irritation occurs, move the person to fresh air. See a doctor if discomfort or irritation continues.

ADDITIONAL INFORMATION:

In case of medical emergencies involving this product, call collect day or night, 1-314-694-4000.

5. FIRE FIGHTING MEASURES

Flashpoint and Method: >200°F TAG CC

EXTINGUISHING MEDIA:

Water spray, foam, CO2, dry chemical or any class B extinguishing agent.

HAZARDOUS COMBUSTION PRODUCTS:

This material will not burn.

FIRE FIGHTING PROCEDURES:

For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment. This may include self-contained breathing apparatus to protect against the hazardous effects of normal products of combustion or oxygen deficiency. Read the entire document.



6. ACCIDENTAL RELEASE MEASURES

SMALL SPILL:

Soak up spilled material with paper towels and discard in trash.

LARGE SPILL:

Liquid spills on floor or other impervious surfaces should be contained or diked, and should be absorbed with attapulgite, bentonite or other absorbent clays. Collect contaminated absorbent, place in plastic-lined metal drum and dispose of in accordance with instructions provided under Section 13. "DISPOSAL". Thoroughly scrub floor or other impervious surface with a strong industrial type detergent solution and rinse with water.

For liquid spills that soak into the ground, contact the applicable Federal, State and or County Health Dept. for disposal recommendations. If disposal is required then refer to Section 13 "DISPOSAL" for instructions.

Leaking containers should be separated from non-leakers and either the container or its contents transferred to a drum or other non-leaking container and disposed of in accordance with instructions provided under Section 13 "Disposal". Any recovered spilled liquid should be similarly collected and disposed of.

Do not contaminate water, foodstuffs or feed by storage or disposal.

GENERAL PROCEDURES:

Observe all protection and safety precautions when cleaning up spills - see Section 8. "EXPOSURE CONTROLS/PERSONAL PROTECTION". For help with any spill, leak, fire or exposure involving this material, call day or night (800) 454-2333.

7. HANDLING AND STORAGE

GENERAL PROCEDURES:

Keep pesticide in original container. Store in a secure, preferably locked, storage area. Protect container from freezing.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

No special ventilation is necessary.



PERSONAL PROTECTION**EYES AND FACE:**

For application of product diluted in accordance with label instructions, no special eye protection is needed.

Handling of the undiluted product is not likely to present an eye exposure concern during normal handling. In the event of an accidental discharge of the material during manufacture or handling which could cause eye contact, workers should wear goggles or a face shield.

SKIN:

No special skin protection is usually necessary. Avoid prolonged or frequently repeated skin contact with this material. Skin contact can be minimized by wearing protective clothing. Wash thoroughly with soap and water after handling.

RESPIRATORY:

Handling of the undiluted product is not likely to present an airborne exposure concern during normal handling. In the event of an accidental discharge of the material during manufacture or handling which produces a heavy vapor or mist, workers should put on respiratory protection equipment. Consult respirator manufacturer to determine appropriate type of equipment. Observe respirator use limitations specified by NIOSH MSHA or the manufacturer.

For application of product diluted in accordance with label instructions, no special respiratory protection is required.

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200):

	EXPOSURE LIMITS		
	OSHA PEL	ACGIH TLV	ACGIH STEL
Ethoxylated Tallowamines	None	None	None
Sorbic Acid	None	None	None

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Appearance: Liquid with a slight ammonia odor

pH: 4.7

Percent Volatile: Not Determined

Vapor Pressure: Not Determined

Boiling Point: Not Determined

Freezing Point: Not Determined

Melting Point: Not Determined

Solubility in Water: Soluble

Evaporation Rate: Not Determined

Density: 8.94 Lbs./gal

Specific Gravity: 1.07 at 20°C

Viscosity: 3.26 cps (Brookfield)



10. STABILITY AND REACTIVITY

STABLE: Yes

HAZARDOUS POLYMERIZATION: No

CONDITIONS TO AVOID

STABILITY:

Mix, spray, apply and store solutions of this product only in stainless steel, aluminum, fiberglass, plastic or plastic-lined steel containers.

DO NOT MIX, APPLY OR STORE THIS PRODUCT OR SPRAY SOLUTIONS OF THIS PRODUCT IN GALVANIZED OR UNLINED STEEL (EXCEPT STAINLESS STEEL) SPRAYERS, because the product and such containers can react to produce a highly combustible mixture of hydrogen gas. This buildup of hydrogen gas in a closed container can create enough pressure to cause the container to rupture, or can flash or explode, causing serious personal injury, if ignited by open flame, spark, welders torch, lit cigarette or any other ignition source.

INCOMPATIBLE MATERIALS:

May react with strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

COMMENTS:

Product is stable for at least 5 years under normal conditions of warehouse storage.

11. TOXICOLOGICAL INFORMATION

ACUTE

Eyes: Moderate to severe conjunctival irritation with minor iridal changes observed in the rabbit eye irritation study. Five of six rabbits eyes were clear by post-exposure day 7. The eye of the remaining rabbit were clear by day 14.

Skin: Slightly irritating with very slight erythema. All animals were free of dermal irritation within 3 days. (Rabbit 4 hour exposure). The acute dermal LD50 in rabbits is greater than 5000 mg/kg. No skin allergy was observed in guinea pigs following repeated skin exposures.

Ingestion: Practically nontoxic. Rat acute oral LD50 is >5,000 mg/kg (EPA Toxicity Category - IV).

Inhalation: Found to be practically nontoxic to rats following a 4-hour inhalation exposure; the inhalation LC50 is >5.7 mg/L (EPA Toxicity Category - IV).

GENERAL COMMENTS:

Data from laboratory studies conducted with a formulation comprised of 62% isopropylamine salt of glyphosate (MON 0139) indicate the following:

In repeat dosing studies (6-month) dogs fed MON 0139 exhibited slight body weight changes. Following repeated skin exposure (3-week) to MON 0139, skin irritation was the primary effect in rabbits.

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Additional toxicity information is available on glyphosate, the active herbicidal ingredient of MON 0139. Following repeated exposures (90-days) to glyphosate in their feed, decreased weight gains were noted at the highest test level in mice, while no treatment-related effects occurred in rats. Following repeated skin exposure (3 weeks) to glyphosate, slight skin irritation was the primary effect observed in rabbits. No skin allergy was observed in guinea pigs following repeated skin exposure. There was no evidence of effects on the nervous system, including delayed effects in chickens (repeat oral doses) or cholinesterase inhibition in rats (single oral doses). Reduced body weight gain and effects on liver tissues were observed with long-term (2-year) feeding of glyphosate to mice at high dose levels. Reduced body weight gain and eye changes were observed at the high dose level in one long term (2-year) feeding study with rats, while no treatment related effects occurred in a second study at lower dose levels. No adverse effects were observed in feeding studies with dogs. Glyphosate did not produce tumors in any of these studies. Based on the results from the chronic studies, EPA has classified glyphosate in category E (evidence of noncarcinogenicity for humans). No birth defects were noted in rats and rabbits given glyphosate orally during pregnancy, even at amounts which produced adverse effects on the mothers. Glyphosate was fed continuously to rats at very high dose levels for 2 successive generations. Toxicity was reported in offspring from the high dose, a level which also produced adverse effects on the mothers. In a 3-generation study conducted at lower dose levels, no effects were seen on the ability of male or female rats to reproduce. Glyphosate has produced no genetic changes in a variety of standard tests using animals and animal or bacterial cells.

12. ECOLOGICAL INFORMATION**ENVIRONMENTAL DATA:**

Do not apply directly to water. Do not contaminate water when disposing of equipment washwaters.

ECOTOXICOLOGICAL INFORMATION:

Studies performed with a concentrated solution of the isopropylamine salt of glyphosate indicate the following:

MON 0139 Technical (62%)

48-hr LC50 Daphnia:	930 mg/L, Practically Nontoxic
96-hr LC50 Bluegill:	>1,000 mg/L, Practically Nontoxic
96-hr LC50 Trout:	>1,000 mg/L, Practically Nontoxic
96-hr LC50 Carp:	>10,000 ppm, Practically Nontoxic

13. DISPOSAL CONSIDERATIONS**FOR LARGE SPILLS:**

Material collected that cannot be reprocessed should be disposed of in a landfill approved for pesticide disposal or in accordance with applicable Federal, State or local procedures.



PRODUCT DISPOSAL:

The Solaris Group is committed to responsible environmental practices and recommends that all of the product be used up, carefully following all label directions and precautions.

If necessary to dispose of partially filled product container, then securely wrap it in several layers of newspaper and discard in trash.

EMPTY CONTAINER:

Do not reuse container. Rinse thoroughly before discarding in trash.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

Proper Shipping Name: Not Regulated

Hazard Class: None

NA/UN Number: None

Packing Group: No

U.S. Surface Freight Class: Tree or weed killing compounds, NOI, Density of 20 lbs. or greater per cu. ft.

AIR (I.C.A.O.)

Proper Shipping Name: Not Regulated

SPECIAL SHIPPING NOTES:

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

PRODUCT CLASSIFICATION UNDER SECTION 311 OF SARA				
Acute: Yes	Chronic: No	Fire: No	Reactivity: No	Pressure Generating: No

311/312 Hazard Categories: Immediate

313 Reportable Ingredients: None

Title III Notes: Immediate (acute) health hazard: Product is moderately irritating to the eyes.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA Regulatory: All non FIFRA regulated components are on the US EPA's TSCA inventory list.



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STATE REGULATIONS

PROPOSITION 65 STATEMENT:

Not listed

16. OTHER INFORMATION

Hazard Rating Systems: This information is for people trained in the use of the following hazard identification systems. National Paint & Coatings Association's (NPCA) "Hazardous Materials Identification System" (HMIS) and the National Fire Protection Association's (NFPA) Hazard Diamond.

HMIS Rating

Health	2
Flammability	0
Reactivity	0
Protection	-

Key

4 = Severe

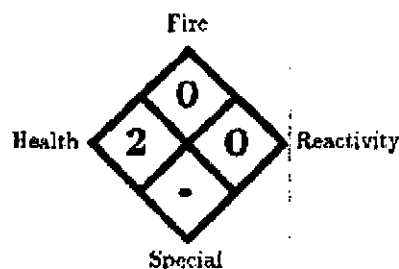
3 = Serious

2 = Moderate

1 = Slight

0 = Minimal

NFPA Rating



Approval date: 09/12/1995

REVISION SUMMARY

New MSDS

COMMENTS:

For additional information concerning this product, call the SOLARIS Groups Consumer Helpline at 800-225-2883.

MANUFACTURER DISCLAIMER:

This Material Safety Data Sheet (MSDS) contains health, safety and environmental information for you and your employees. It does not replace the precautionary language, use directions, or the storage and disposal information found on the product label. Information contained in this MSDS will help you to prepare for emergency response and to meet community right-to-know, emergency response and reporting requirements under SARA Title III and many other laws. Emergency response agencies and health care providers will also find this additional information useful.

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Use of this product is regulated by the U.S. Environmental Protection Agency (EPA) through the approved label copy. It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Although the information and recommendations set forth herein (hereinafter "Information") are presented in good faith and believed to be correct as of the date hereof, Monsanto Company and The Solaris Group make no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determinations as to its suitability for their purposes prior to use. In no event will Monsanto Company or The Solaris Group be responsible for damages of any nature whatsoever resulting from the use of or reliance upon Information. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.
